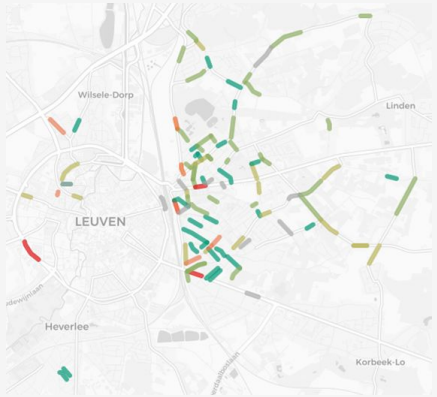
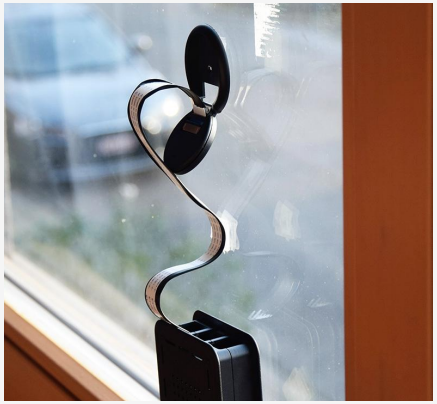
WECOUNT empowered by Telraam Enabling citizens to initiate a policy-making process with fully automated traffic data collection

03/03/2023 - Euregio Mobility Workshop Aachen



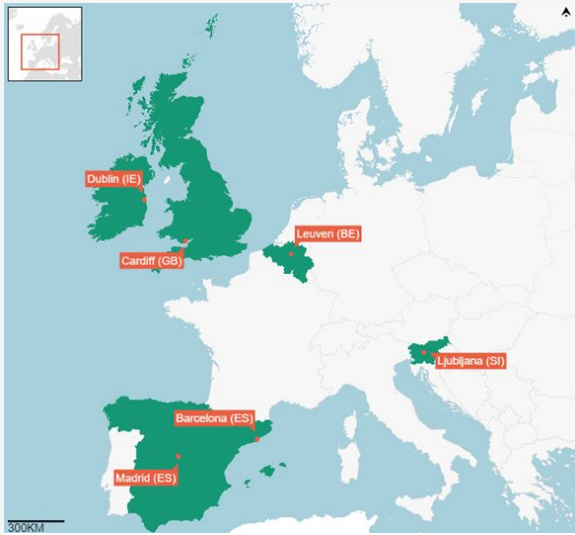
Introducing: What's WeCount? What's Telraam?

- Low-cost traffic counting sensor + open data platform (www.telraam.net)
- Continuous traffic counting of 4 modes: pedestrians, bikes, cars, large vehicles
- Citizen science: Installed, owned, managed and data interpretation by **citizens**



Introducing: What's WeCount? What's Telraam?

- WeCount (Citizens Observing Urban Transport; 11/2019-11/2021) was a Horizon 2020 funded project, part of a Science with and for Society call (SwafS)
- Citizen science project empowering citizens to take a leading role in the production of data, evidence and knowledge around mobility in their own neighbourhoods
- 5 case studies, citizen science pilots, using Telraam

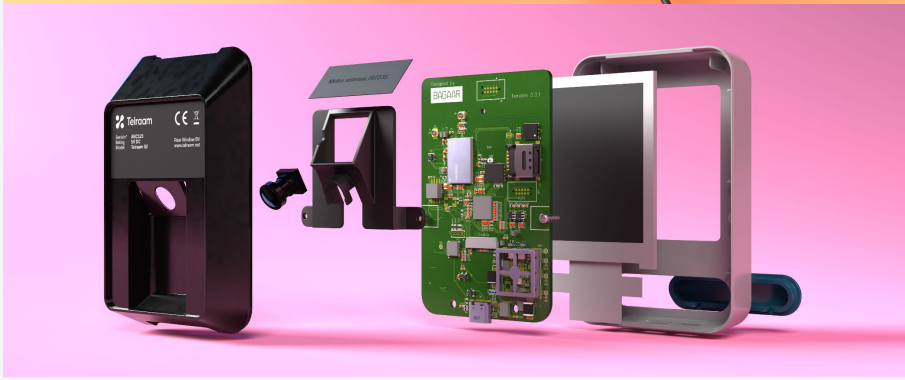


The WeCount Project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 872743

Telraam, the sensor

V1

S2



Purposely build Telraam
Custom PCB
Designated AI chip
IoT framework
USB C-powered

Built-in camera
Wide angle camera
Automatic region of interest selection

LCD display
Interaction with device
Instant visualization of counting data

Data connection
AI counts on device
No images saved
No wifi needed

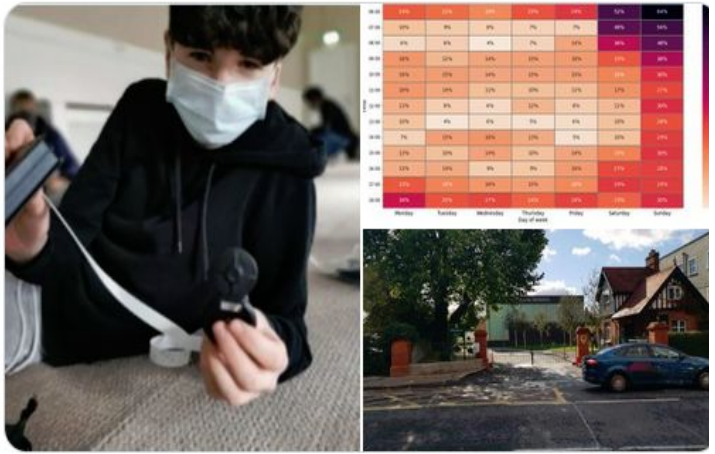
AWS server
Classification
Agrégation de données
API

Together with citizens

Telraam @TelraamTelraam · Oct 10, 2021

Traffic volumes around schools are a major concern for citizens in Dublin. The Dublin case study is providing traffic and air quality monitors to local schools to help them collect objective measurements outside the school gate. @WecountH

we-count.net/news/dublin-sc...

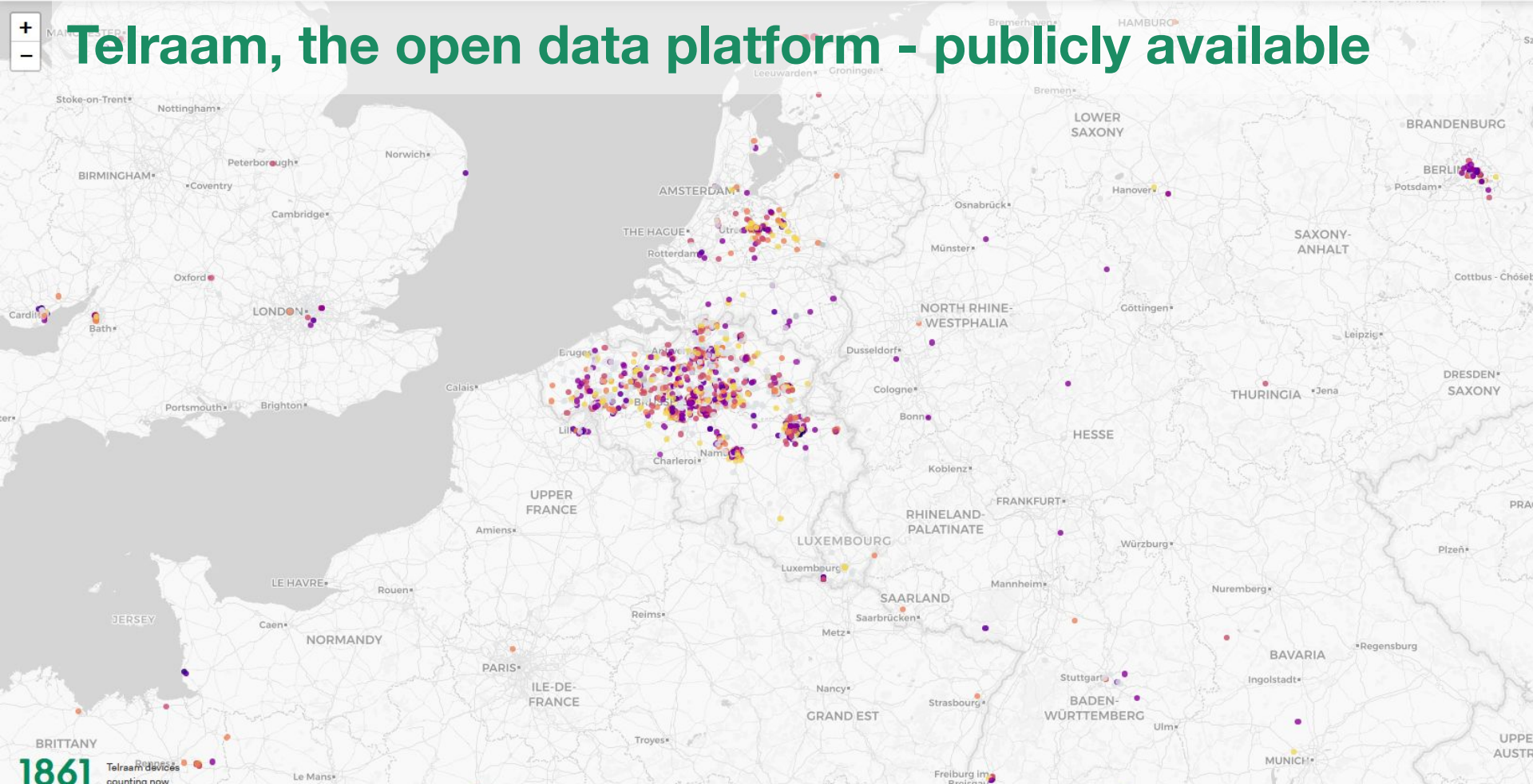


In partnership with civilians

Possibility to set up networks of grassroots (NGOs) and top-down (village - district - city - national bodies) measurement networks

- ✔ Installation possible in every home (that complies to the technical requirements).
- ✔ Gives citizens a key role, involving them in the process (public engagement + citizen science)
- ✔ Objective tool to support needs and intuitions *("There are too many cars here in the morning..."* But what does "too many" mean, and is it really not in line with the infrastructure and traffic plans?)
- ✔ Provides the opportunity to assess and long-term monitor conditions at local level

Telraam, the open data platform - publicly available



Telraam, the open data platform (API) - publicly available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        0.4424778761,
        0.6637168142,
        1.9911504425
      ],
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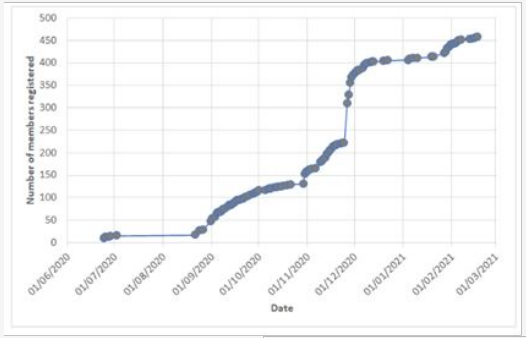
        19.6902654867,
        24.5575221239
```

WeCount research question:

How to set up an inclusive, durable, self-supporting citizen science community (“ecosystem”), and realize policy change?

The WeCount method

1. **Scoping & community building**
2. Co-design
3. Data collection
4. Data analysis & awareness
5. Reflection & policy impact



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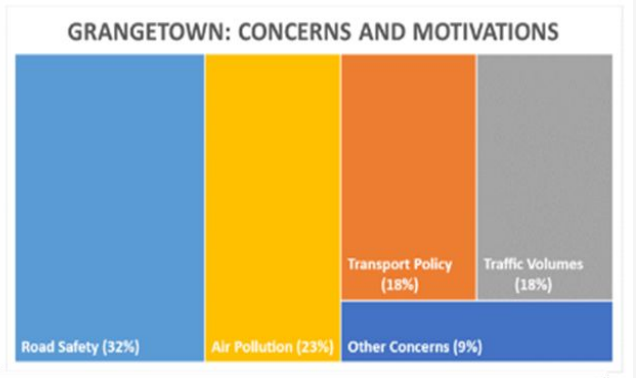

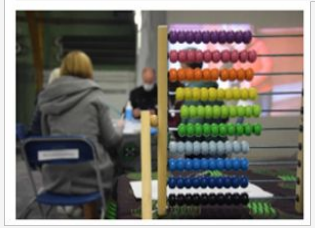

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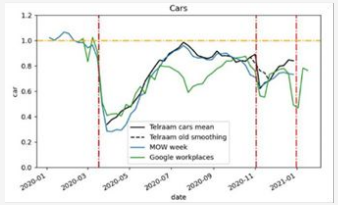

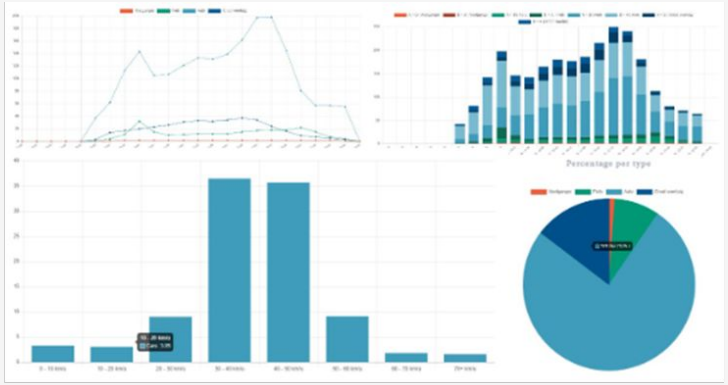

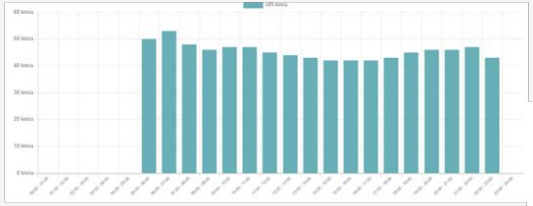

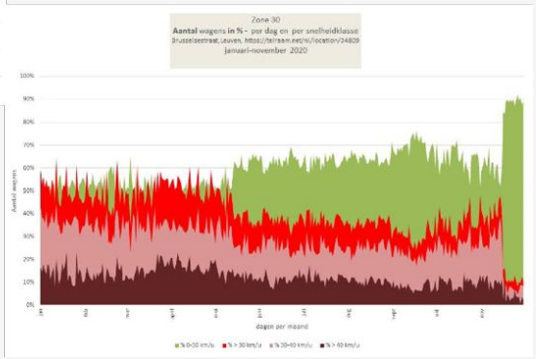

The WeCount method

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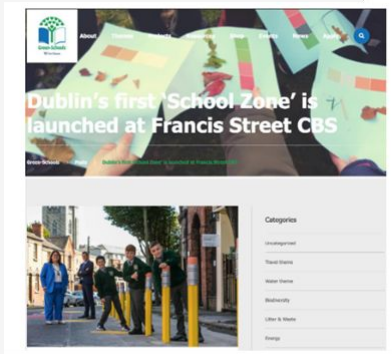
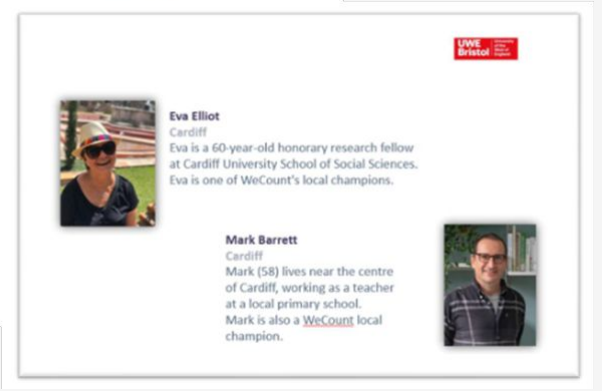
5. **Reflection & policy impact**

El tancament dels dies 4 i 5 va triplicar el trànsit als carrers secundaris

El comptador del projecte We Count del carrer Bellver va registrar en el tancament extra de carrers dels 4 i 5 de gener el triple de trànsit de cotxes, motos i bicicletes pels desviaments aplicats en aquest cas de Torrent de l'Olla. Dijous 7, per exemple, hi va haver uns 1500 vianants, 300 bicis o motos i 200 cotxes; en canvi, dimarts 5 van ser 1600 vianants, 800 bicis o motos i 600 cotxes.

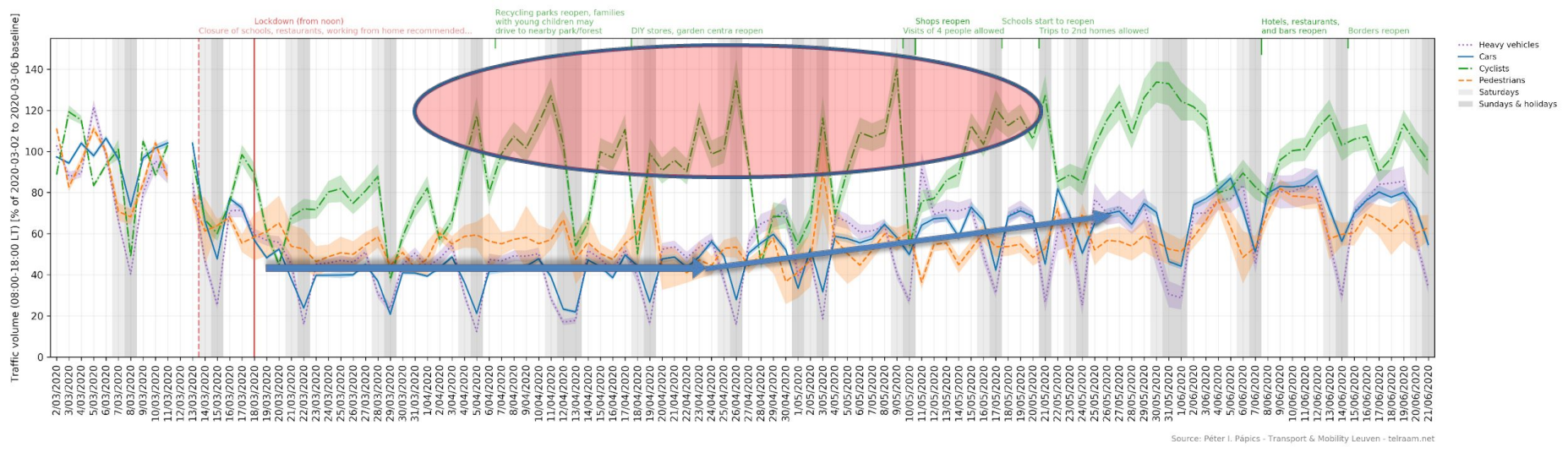




Case studies

Covid-19 lockdown impact on Belgian traffic

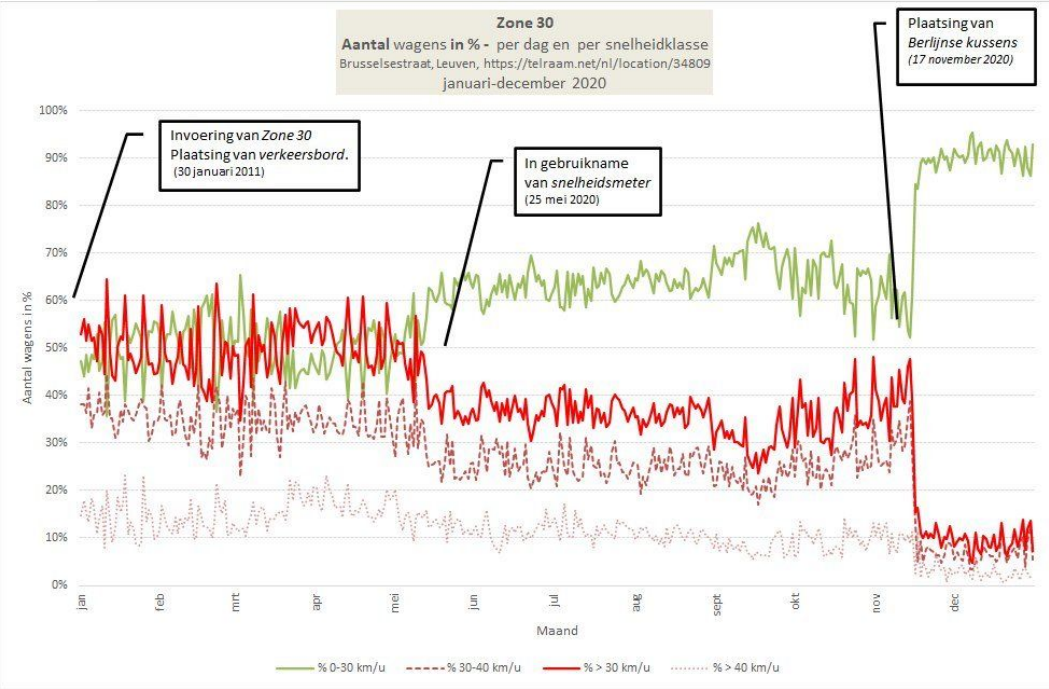
(analysis of data exported with API)



Impact of:
(a) placement of digital speed sign
(b) placement of Berlin cushion on average speed in zone 30.

Traffic speed reduction after Telraam

(speed below and above 30 km/h %)



Impact of:
(a) placement of digital speed sign
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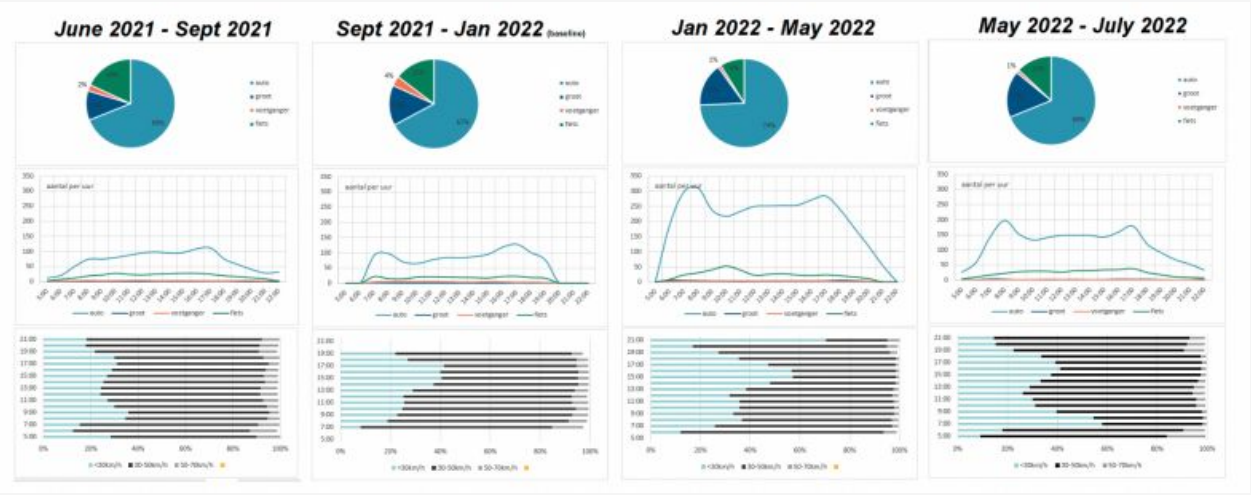
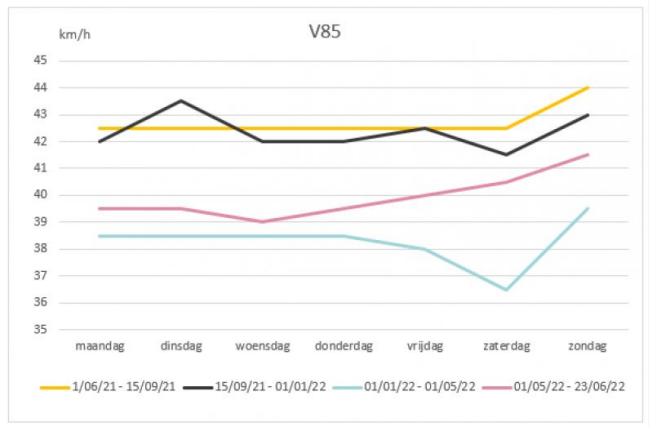
Tracking impact of construction works





[BLOG-post]

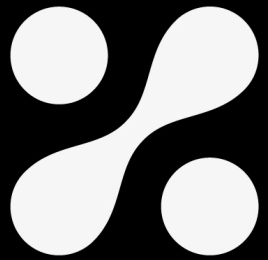
CONCLUSION - WeCount key learnings

Technology/equipment needs to be simple!

“The more involved you are, the more likely you are to act”

Citizen science =/= passive data collection

If you start a citizen science project, commit to it or you will frustrate participants!



Telraam

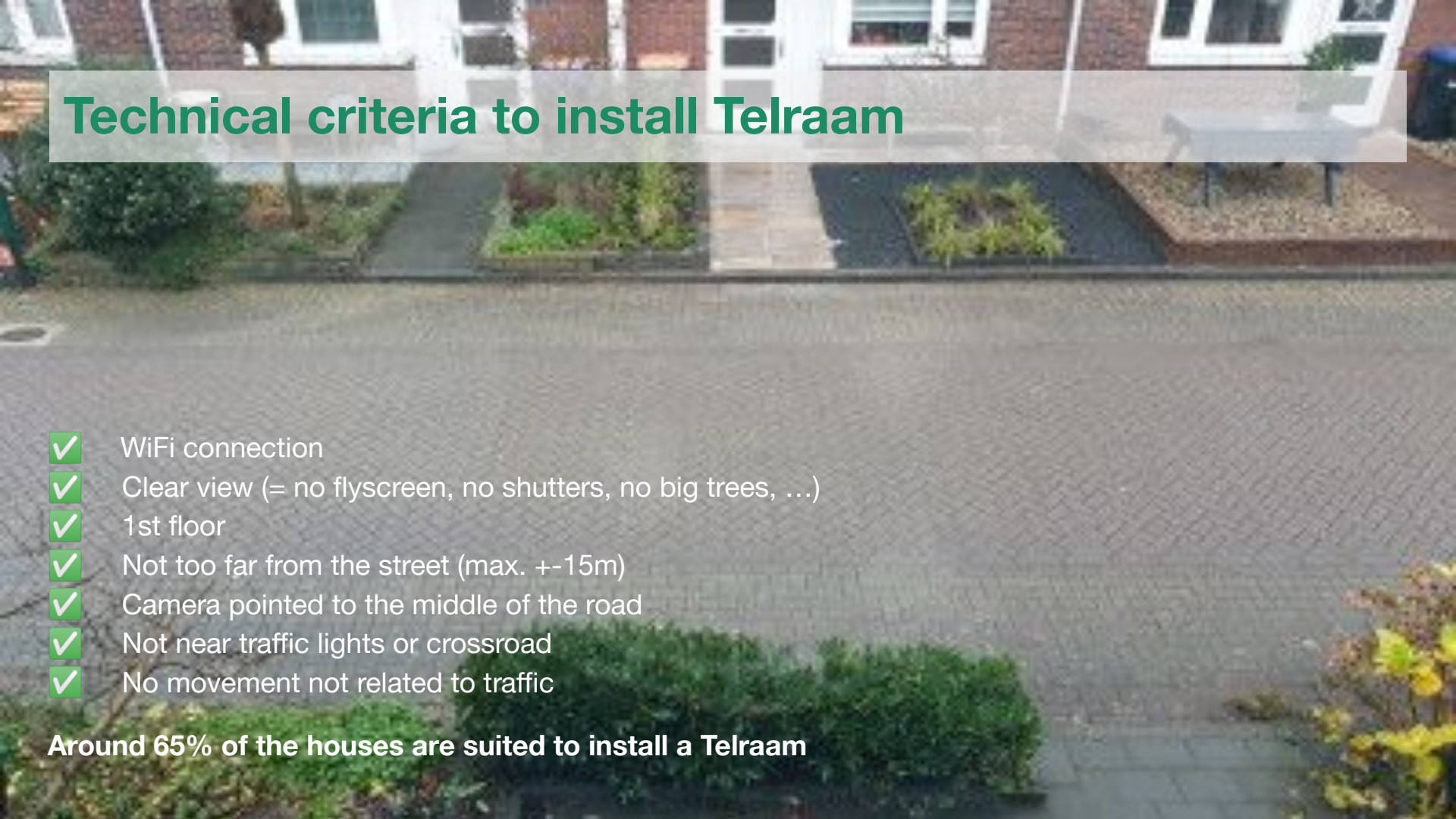
Algemene vragen:
info@telraam.net

Diestsesteenweg 71
B-3010 Leuven

www.telraam-api.net
www.telraam.net

BACKUP SLIDES

Technical criteria to install Telraam



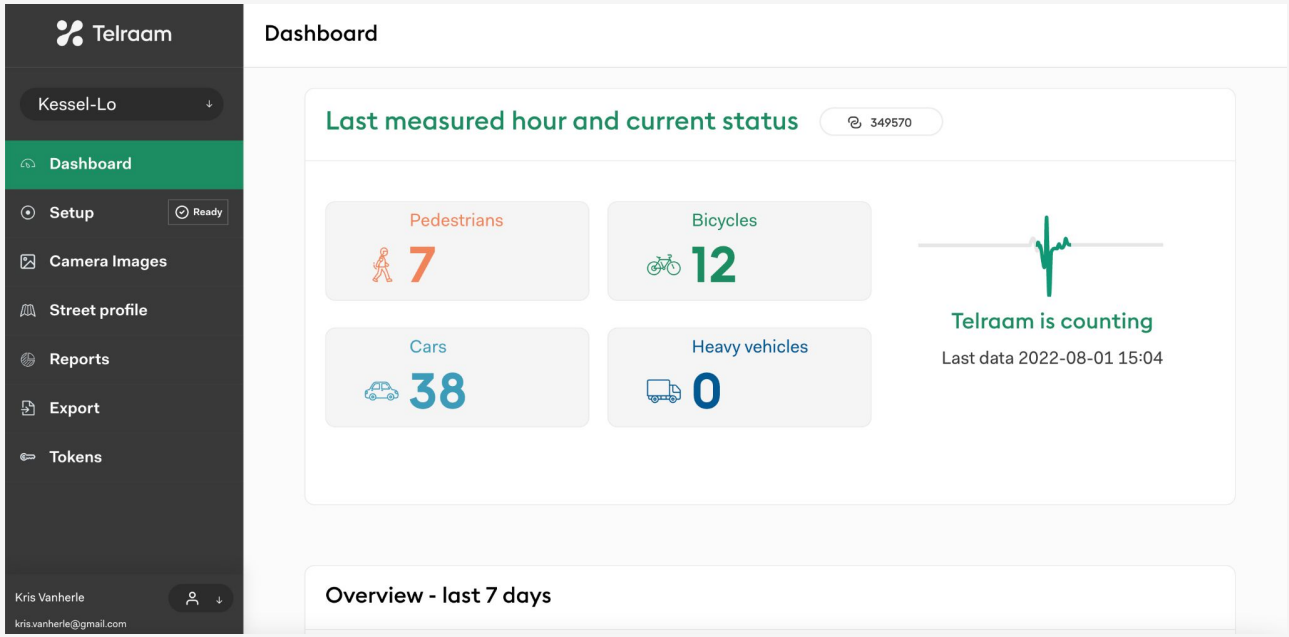
- ✅ WiFi connection
- ✅ Clear view (= no flyscreen, no shutters, no big trees, …)
- ✅ 1st floor
- ✅ Not too far from the street (max. +-15m)
- ✅ Camera pointed to the middle of the road
- ✅ Not near traffic lights or crossroad
- ✅ No movement not related to traffic

Around 65% of the houses are suited to install a Telraam

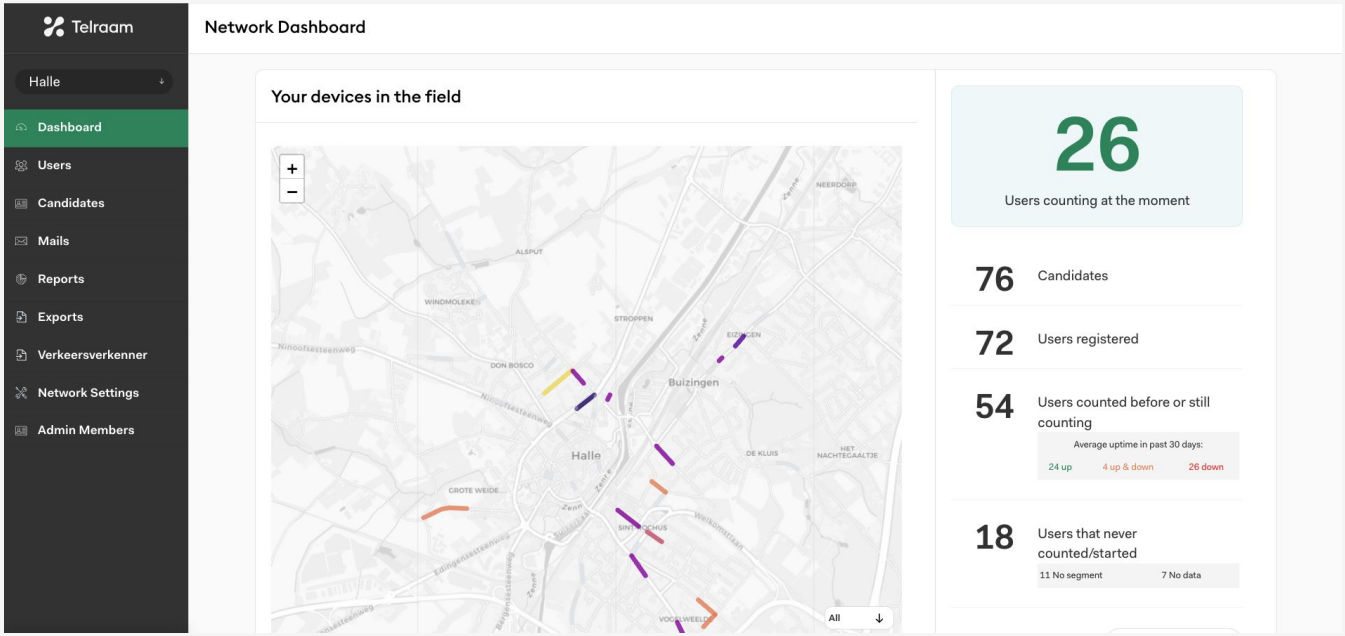
Privacy: not ANPR, no face recognition, no license plate recognition, camera legislation not applicable, no video images, image processing ‘on the edge’

Telraam, the dashboard

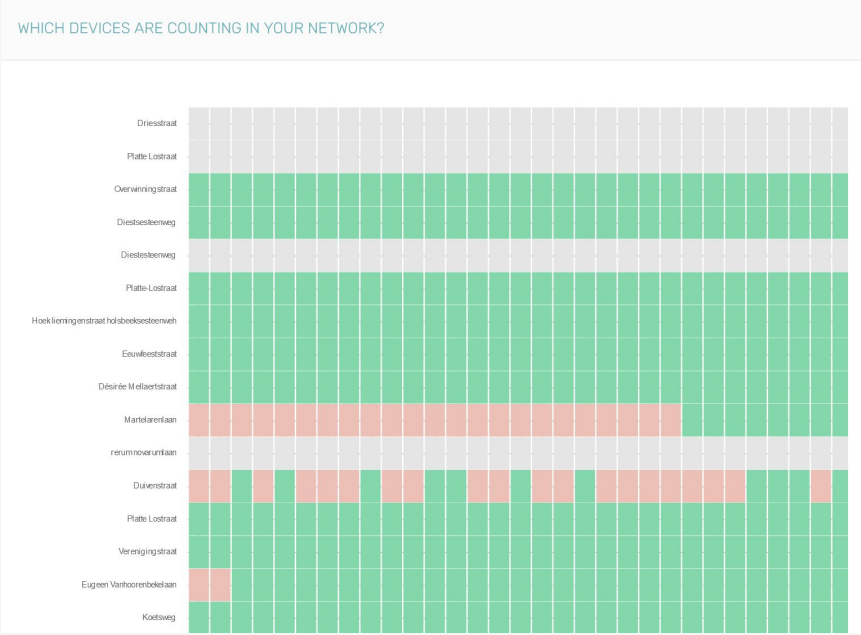
(1) Personal Telraam dashboard - own data, settings, …



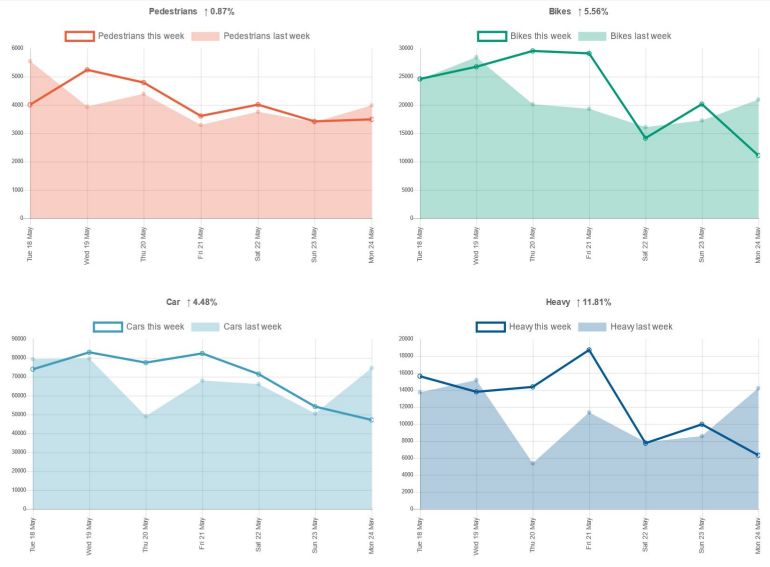
(2) Network administrator dashboard

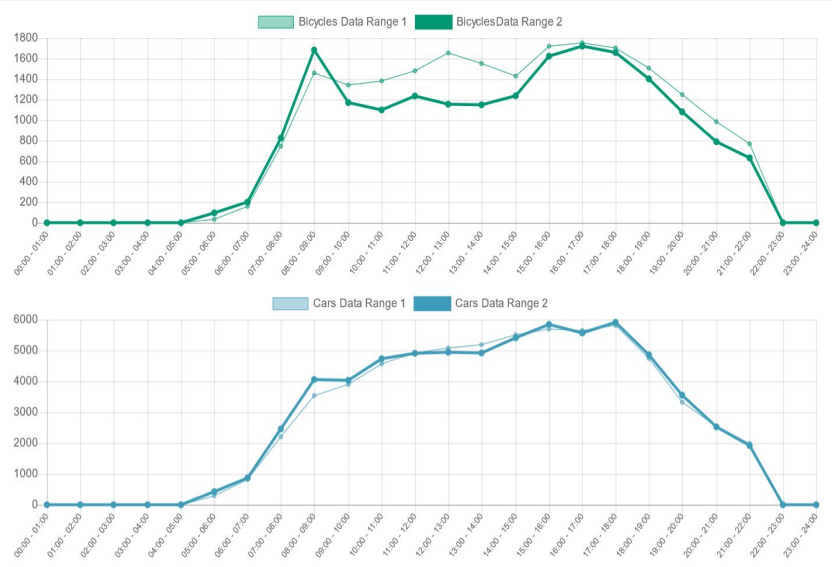


(2) Network administrator dashboard: statuses

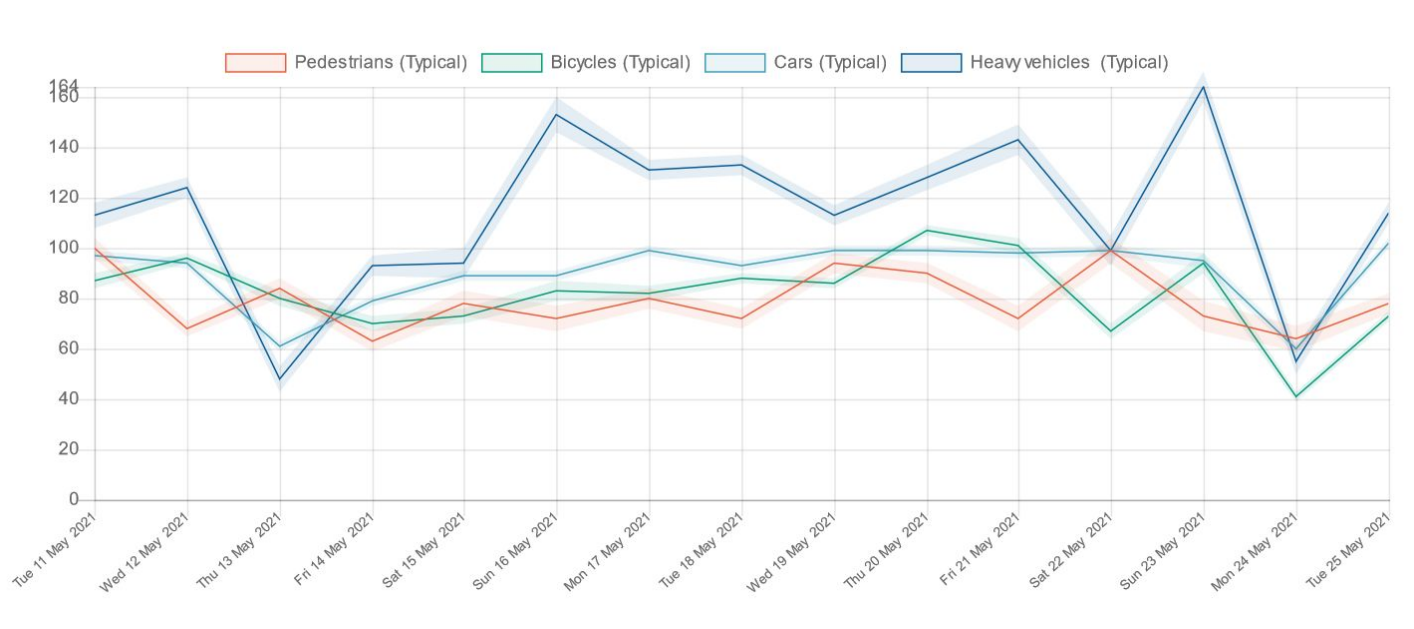


(2) Network administrator dashboard: relative data series



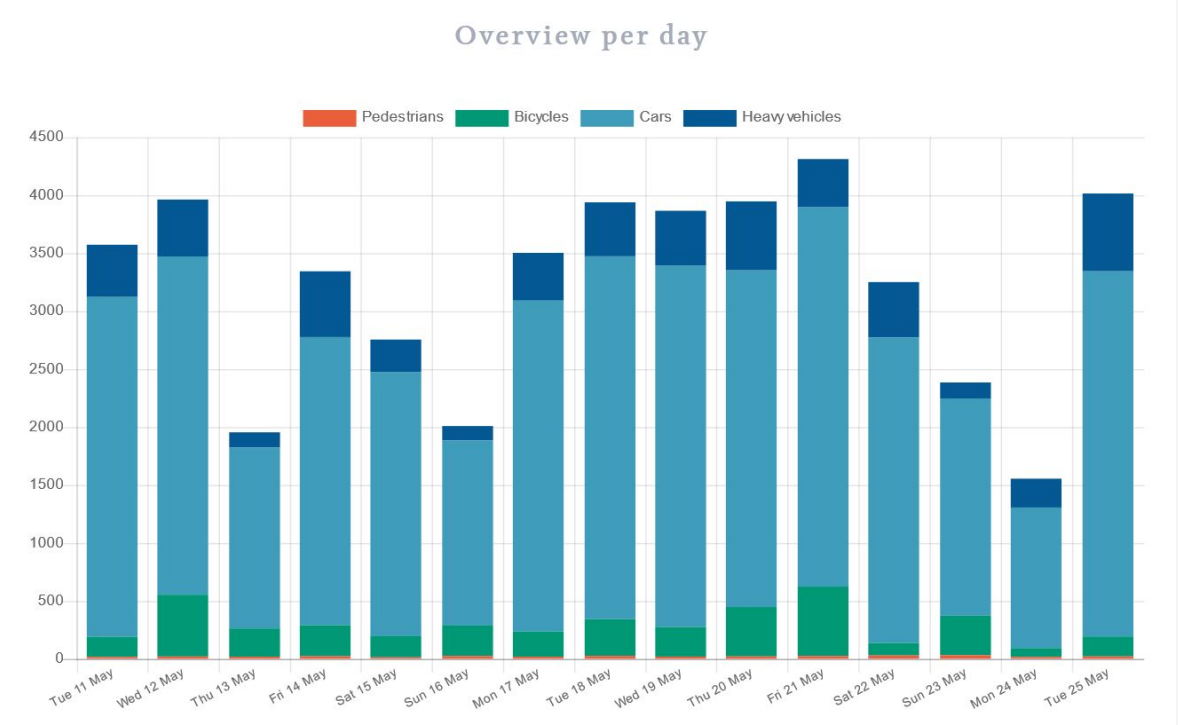


(2) Network administrator dashboard: comparison of different time-intervals



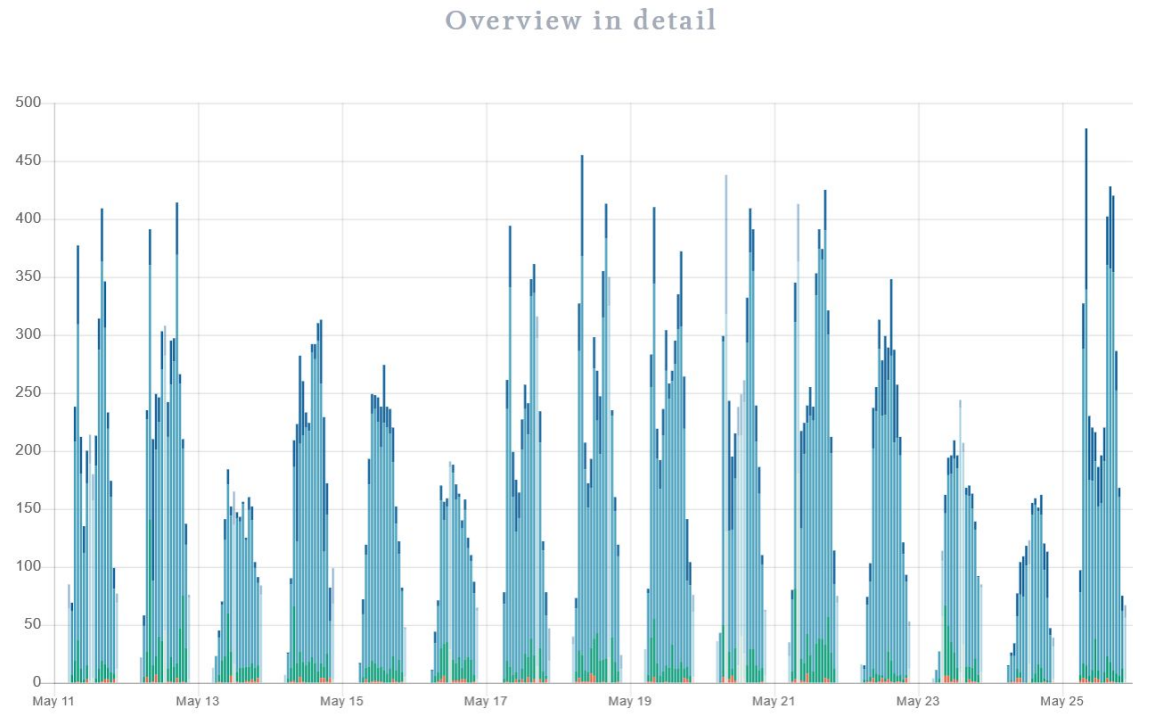
The data

Daily traffic

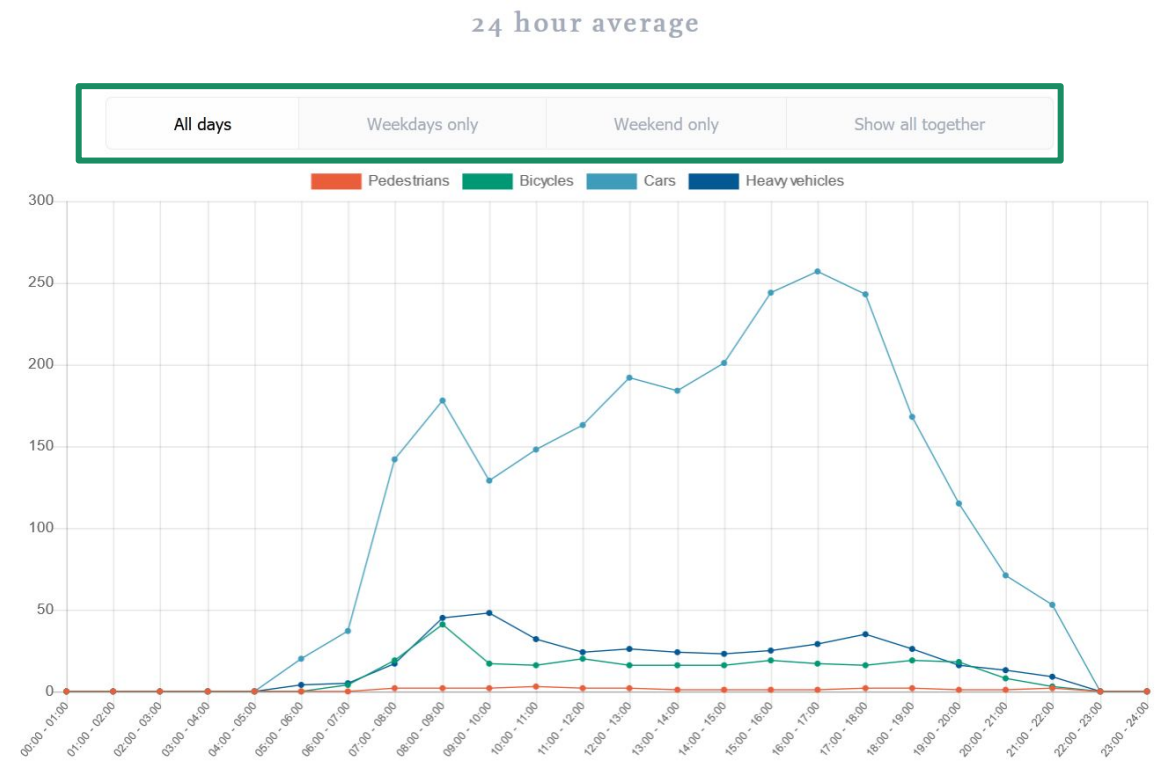


Hourly traffic

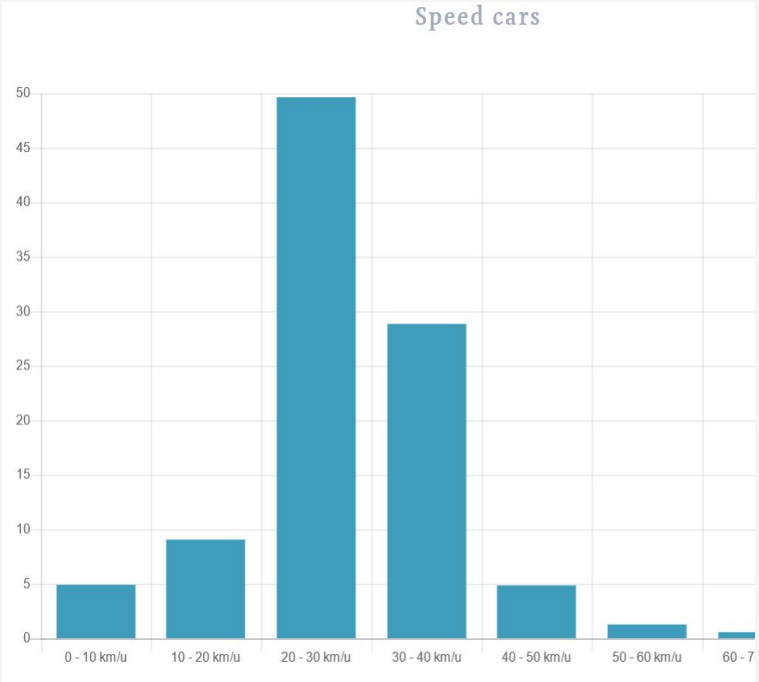
Morning and evening peaks during weekdays

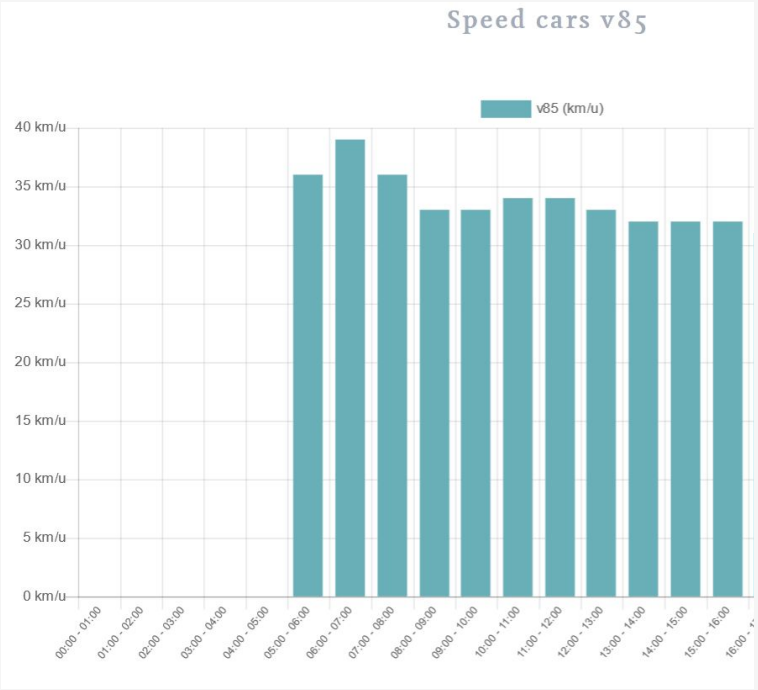


Average turnover

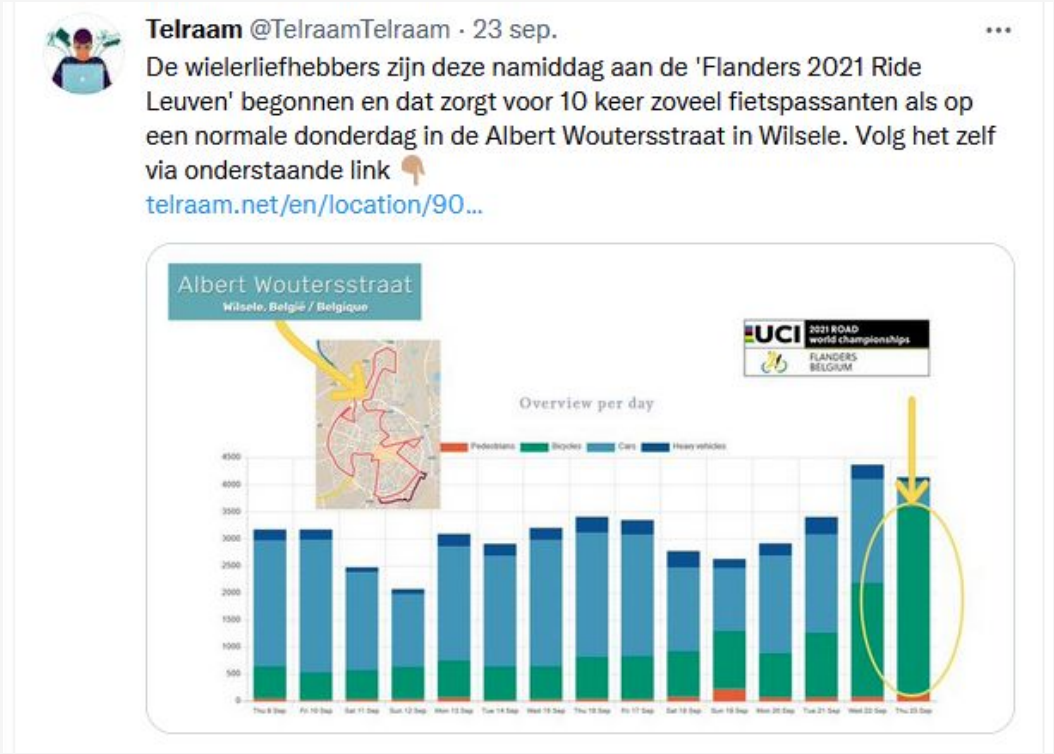


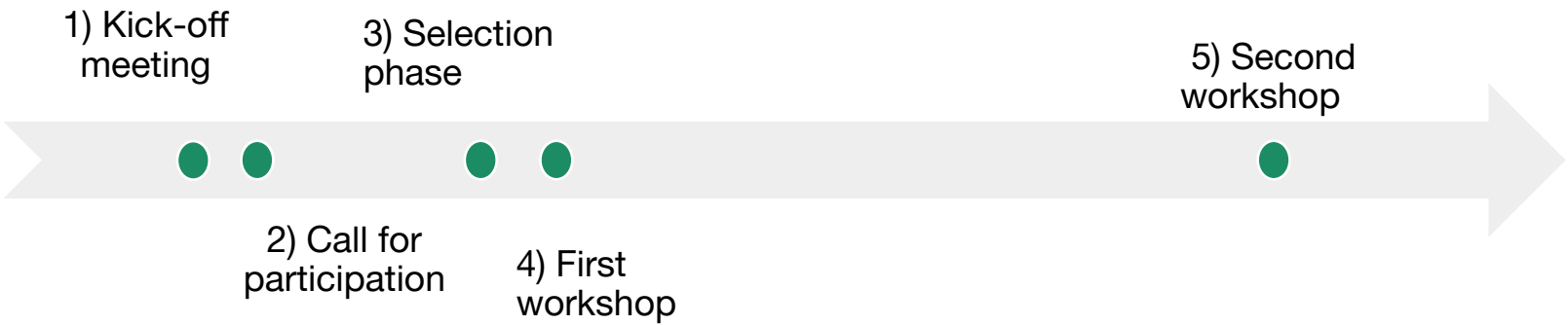
Speed of cars: histogram and V85





Worldchampionship cycling (Leuven, BE)



Timeline of Telraam project

Timeline of a typical Telraam network